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ABSTRACT

This booklet is written for the general reader who wants to understand important trends in vocational education and training. The first part is a description of the subject matter in a manner intended to be clear to any interested layperson. It defines quality and then discusses these changes in organizations to respond to the demand for good quality: changes to attitude throughout the organization, changes to organizational structure, and changes to organizational operation, including increased responsibility for quality. The linkage of statistics to quality is examined, and key quality principles are discussed. Australia's industry restructuring method is then described. McDonald's is considered as an international example. Introduction of material on quality into Technical and Further Education courses is addressed. Other topics are the importance of strategic planning and the evolution of quality control in Australian organizations. The second part gives an annotated list of 10 publications. (YLB)

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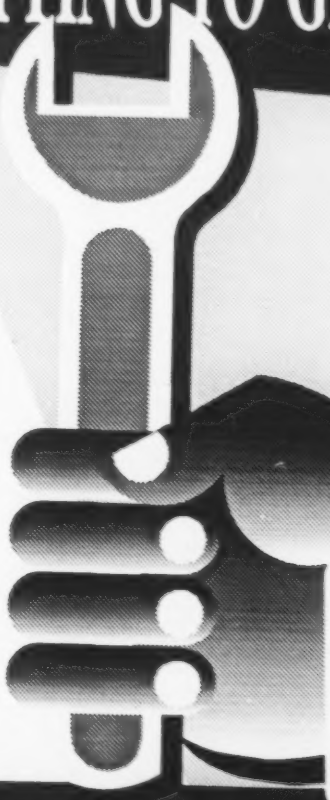

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QUALITY

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GETTING TO GRIPS WITH QUALITY

William Hall

ABOUT THE SERIES

The *Getting to grips with . . .* series has been written for the general reader who wants to understand important trends in vocational education and training.

Each booklet is in two parts. The first part comprises a description of the subject matter in a manner which is intended to be clear to any interested layperson. The second part gives an annotated list of publications for those who want to read further.

Other titles in the series include: *Getting to grips with skills audits, Getting to grips with competency-based training and assessment, Getting to grips with industry restructuring, Getting to grips with key technologies, Getting to grips with on-the-job training, and Getting to grips with on-the-job competencies.*

The Series Editor is Dr. William Hall, Executive Director, TAFE National Centre for Research and Development. The Series Designer is Bain Middleton.

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INTRODUCTION

'Quality' is a vogue word. But, like the other vogue training words such as 'restructuring', 'competency' and 'standards', it is an important word and one which we need to understand. This booklet has been written to enable the general reader to 'get to grips with' the idea of 'quality'.

It is intended to be a realistic approach, not one which quotes someone, who quoted from someone else who once visited a Japanese factory! It is also written in the belief that there is an Australian way.

I would like to acknowledge the help of others, especially colleagues at the TAFE National Centre for Research and Development; Raffaele Basile of McDonald's Restaurants; and Tony Lothian of the SA Department of Employment and TAFE.

Throughout the booklet you will see boxes like this. These boxes contain examples, or illustrative material, or definitions, which help to amplify the main text.

WHAT IS QUALITY?

Of course it's top quality

'Never mind the quality, feel the width' used to be a catchcry of some market stall holders selling lengths of cloth. What they meant was, why worry about quality when you can have a large quantity of cheap cloth.

'Never mind the quality, feel the width' would rarely sell anything today. People care about quality and are usually prepared to pay for it.

Of course, quality need not necessarily imply expense. Many cheaper cars are of good quality. To be sure of good quality we don't have to buy a Rolls Royce. However, if we were fortunate enough to be able to afford a Rolls Royce, we would be paying for exclusiveness and for luxury, as well as for top quality.

But a Ford is cheaper

People are prepared to pay for exclusiveness. For example, people buy designer labels instead of much cheaper labels, even though the cheaper articles are frequently just as reliable. So quality is not the same as expense.

What then do we mean by 'quality'? In everyday life, when we buy a *product*, we ask ourselves:

* Does it do its job well? (Effectiveness)
* Does it look good? (Presentation)
* Is it trouble free? (Reliability)
* Is it reasonably priced? (Cost)

For *services* we ask questions like:

* Am I getting what I'm supposed to get? (Effectiveness)
* Am I getting it in a way that appeals to me? (Presentation)
* Am I getting it on time? (Reliability)
* Are the fees reasonable? (Cost)

(We generally assume that products sold and services offered are safe and operate within the law. There are frequently legal, safety and quality requirements. Australian standards AS 3900-4 are quality standards for the manufacturing industries, for example.)

The questions shown above for products and services may be summarised as:

* Are my requirements being met?

Quality and the customer (or client)

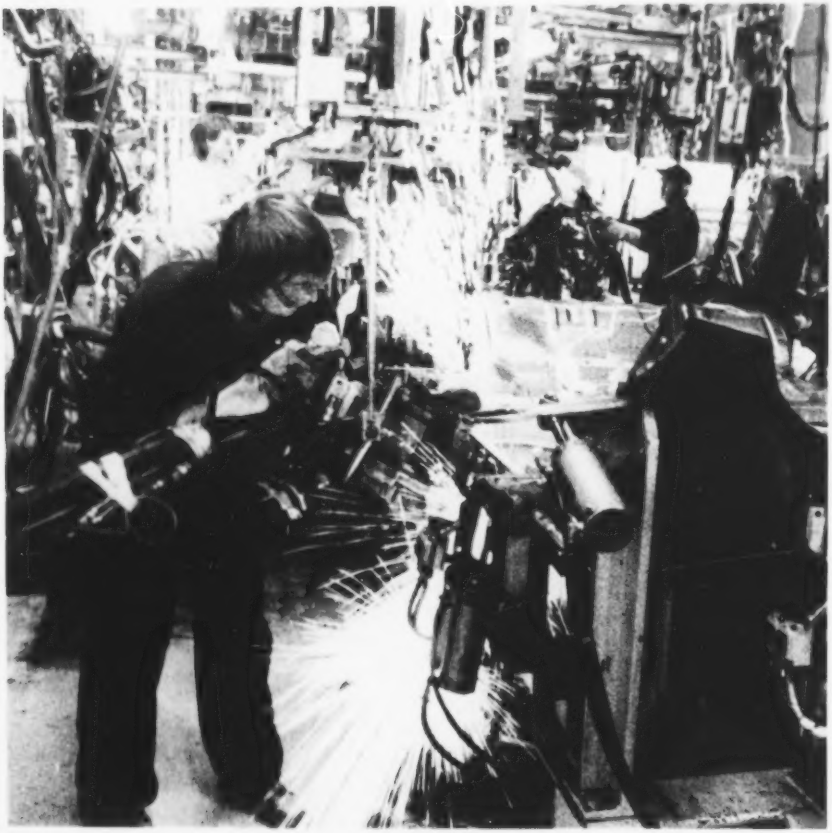
Effectiveness
Presentation
Reliability
Cost
} Requirements

By quality, then, we mean meeting the customer's (or client's) requirements.

If quality is so important, how have we tried to achieve it in the past?

The traditional approach to industrial quality control has been to inspect the final products at the end of a production line and to reject those products not meeting the required standard. There were two disadvantages to this approach.

First, many faulty products were missed and so they were not rejected. Second, the rejection rate was frequently so high that the final product became too costly and uncompetitive. Both factors would quickly lead a company into bankruptcy.



Don't blame Taylor

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Perhaps the worst feature of the old way was everyone's belief that 'faults are inevitable'. If we bought something, we just knew it was likely to go wrong.

Dr W. Edwards Deming

Total quality control changed the 'cheap and nasty' image of Japanese manufactured products to one of quality and reliability. This change was achieved in about 20 years.

Dr Edwards Deming, with Dr Joseph M. Juran, is generally acknowledged to have catalysed the major changes to Japanese management after the Second World War.

One of Deming's best known statements is:

> *Good quality does not necessarily mean high quality. It means a predictable degree of uniformity and dependability at low cost with a quality suited to the market.*

Note the terms used by Deming, but especially 'predicability', 'uniformity' and 'dependability'. These are based on Deming's statistical approach to quality.

Quality is determined by the customer. Whether we are producing goods or offering services, we are in business to serve customers. And customers now expect good quality. More and more organisations are recognising this factor, and so in order to provide good quality, their traditional approach to management has had to change. Change has involved:

* changes to *attitude* throughout the organisation;
* changes to organisational *structure*;
* changes to organisational *operation*, including increased *responsibility* for quality.

Let's look at each of these.

CHANGES IN ATTITUDE

The story is told of an overseas delegation visiting France to inspect that country's school system. With pride, the Minister for Education looked at the clock and said, "Ladies and gentlemen, every high school in France will now start to teach mathematics".

Learning by rote, unquestioningly obeying instructions, and answering questions exactly the way the teacher wanted them to be answered, were all officially endorsed characteristics of schooling in France. Similar practices characterised Australian schooling systems.

Thinkers at work

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Almost all literature on quality ignores the important foundations of schooling. That is where attitudes are formed.

Attitudes formed at school were then brought to the workplace. These attitudes were reinforced with production line thoughtlessness and inflexibility; worker and boss antagonism and confrontation; and the unique Australian optimism expressed as "She'll be right".

Some traditional attitudes

Here are some of the wrong attitudes we must change.

* Quality means higher costs.
* Quality is achieved through inspection only.
* Close enough is good enough.
* Obtain quality by fixing (reworking) defects.
* She'll be right.

Why change our attitudes?

* Competition is increasing.
* Costs are escalating.
* Markets are demanding good quality.
* Australian industry's long-term economic health is threatened.
* Being second-rate disappoints everyone.

Let's consider one traditional fallacy: that good quality means higher costs. In one organisation which I know, a middle manager was adamant that if quality had to improve, quantity must suffer. "We are already working flat out," he said, "how can we be expected to do more?"

The truth is that organisations find that productivity *increases* as quality improves. As well, there is an important attitudinal change by employees when good quality goods and services are produced. They develop pride in their jobs.

CHANGING ORGANISATIONS

The assembly line assumes a strict organisational hierarchy ("It's my job to kick you, and it's your job to kick the bloke below you"). It also assumes that most people in an organisation will not be expected to think. Indeed, thinking could actually reduce output because people must operate as part of a machine.

At Toyota

Satoshi Kamata provides an insider's account of life in a Japanese car factory. Here are two extracts, which provide a different view of Japanese industry to what many others are promoting.

> *Workers are urged on to production, day and night. So tightly are their lives bound to the conveyor belts in the plants that they cannot even take days off when they want to. The thoroughgoing enforcement of rationalisation has eliminated all relief workers. Not only team leaders, the lowest management people, but also unit leaders have been required to work on conveyor lines. Even foremen, normally part of higher management, may sometimes put on working gloves and lend a hand. Then these men have to take home their paperwork such as the writing of daily reports*

and the calculation of day-by-day work units. Through it all the conveyor belts are kept running with the absolute minimum number of men necessary. (Page 208)

While management journalism may applaud Toyota's high profit and the 'kanban method' which they see as supporting it, the human costs of Toyota methods - suicides, injuries, job fatalities, and occupational disease - increase at a horrifying rate. The situation at Toyota is a sad but typical example of the victimisation of workers in modern society. Workers suffer every day in front of conveyor belts . . . . . Whenever I come to this city and talk with the workers, I feel as though I have strayed into some fantasy land. But this is a nightmare that I have lived, and the anger will not go away. (Page 211)

(From *Japan in the passing lane* by Satoshi Kamata, published by Unicorn, 1982.)

The person most often blamed for getting us into our present mess is an American engineer, Frederick Winslow Taylor. Taylor's analysis of work in the 1880s helped to produce the affluence associated with all industrial societies. The main criticism of his approach is that he ignored the end product of work. With Taylor, "Why?" questions were totally ignored.

Taylor had nothing to do with the invention of the assembly line. He was a humanist and his humanistic approach was recognised by Louis D. Brandeis who coined the term 'scientific management'. The current criticism of 'Taylorism' is unfair because his style of 'scientific management' was appropriate for the industrial needs of his day.

Here is an extract from his book *Industrial Utopia*:

The inspector is responsible for the quality of the work, and both the workmen and the speed bosses (foremen) must see that their work is finished to suit him. This

man can, of course, do his work best if he is a master of the art of finishing work both well and quickly.

The full result will not have been realised until almost all of the machines are run by men who are of smaller calibre, and therefore cheaper than those required under the old (craft-based) system.

The second reason why today's criticisms of 'Taylorism' is unfair is because *much of Japan's quality control is based on Taylor's work*, a fact conveniently ignored by Taylor's critics.

Dr Taylor described control as *plan - do - check* (he used 'see' instead of 'check', but 'check' better describes his intentions). Kaora Ishikawa in his highly readable personal account *What is total quality control? The Japanese way* describes how Taylor's approach to control is amended to produce the *control circle*.

Organisational structures in Australia are becoming flatter (layers in the hierarchy are being scrapped), all workers are broadening their skills ('multiskilling') and almost everyone now has some management responsibility.

This management responsibility must recognise that everyone has a customer, even inside an organisation.

Everyone is a manager
Everyone has a customer

This leads to the third change to management: operational changes.

OPERATIONAL CHANGES

The first two management changes we have considered are:

* changes in attitude;

* changes in organisational structure.

These changes are pointless and will only lead to frustration unless they are accompanied by *operational changes*. Operational changes include giving increased and appropriate responsibility to all workers. This increased responsibility must be accompanied by training, otherwise there could be confusion and much time wasted. Confusion will reduce productivity and efficiency.

After operational changes have been made, the role of the manager changes. Workers are encouraged to think and to suggest improvements. Everyone is now responsible for quality. However, unless care is taken, this could mean that no one is responsible for quality!

Dr Myron Tribus

One of the biggest total quality management influences in Australia has been the series of lectures conducted in 1988 by Dr Myron Tribus. The lectures were presented at the initiative of BHP Coated Products Division. Most reports and books on quality in this country since then have been largely based on these lectures.

Here are some of the claims made by Dr Tribus.

> *Only customers can define quality. Everyone has a customer. The next person in line is your customer. Whenever there is a problem, 85% of the time it will be the system, 15% of the time it will be the worker.*
>
> *All systems exhibit variability. Variability is the indicator of a low control process. Managers need to learn how to tell signals from noise. Statistics is the only tool for this purpose.*
>
> *The people work IN a system. The job of the manager is to work ON the system, to improve it with their help.*

Frequently, deficiencies to processes or products are glaringly obvious and easily rectified. Here are examples taken from my own experience.

Breakdowns in one factory were extremely high. Product quality was suffering; there was a high rejection rate. On questioning the production staff, they said that they had never been told how to operate the newly installed machines. In any case, written instructions were in German. As a result a maintenance engineer had to be flown from Germany to Australia to deal with major breakdowns.

In another organisation, there were regular breakdowns in communication within a section. This led to frustration and to bickering. Things kept going wrong. That section now meets fortnightly as a team, to plan their schedules and to discuss problems. Communication has improved; things rarely go wrong now.

A third organisation was having difficulty in increasing sales. It was found that not once had they systematically tried to find out what their clients wanted.

A fourth organisation would only restock a product when it had completely run out of it. This procedure kept customers waiting for up to four weeks if a product was out of stock. Now the organisation keeps an inventory and weekly sales figures for every item. Products no longer run out of stock and customers no longer have to wait.

Here are two further examples from personal experience. Recently, my wife and I travelled around the world. We stayed at eight hotels. Most did not have skirt hangers in the wardrobes. At the one five star hotel we had to go to a local market to buy skirt hangers. Don't hotels realise that one-half of the population is female?

Prior to landing at an overseas airport, all passengers were given the usual disembarkation forms to complete. The steward gave helpful instructions that we should complete the forms back-to-front, starting from the bottom and working up to the top, otherwise we would make mistakes and have to do them again. I decided to ignore the advice and to start with question one at the top, as the form designer had intended. I had to do it all over again . . . The steward was right, the forms were of very poor quality.

And so the examples could be continued. But these are sufficient to make the point that poor quality permeates our lives.

At this stage it will be useful to have some definitions. They will help to summarise what has already been covered and will set the scene for the next part of the booklet.

Some definitions

Quality: providing what the customer wants at an appropriate price. Quality is measured by comparing the customer's requirements with the customer's experience.

Quality assurance: the assurance that the organisation is structured and operates in such a way that it produces what the customer wants.

Total quality management: management that has customer requirements as its aim. It is total in the sense that it involves *all* employees, processes and products/services.

Total quality control: operational activities and techniques, including quality statistical principles, applied to the whole organisation to produce quality goods and services.

In writing this booklet I received much unexpected criticism from those who did not like the definition of 'quality'. Critics insisted that *they* should determine quality, not the customer. It is precisely this cavalier attitude that has helped to produce some of today's problems!

The next idea to be considered is 'statistical principles'. The section on Dr W. Edwards Deming mentioned his statistical approach to quality while that relating to Dr Myron Tribus also introduced the use of statistics.

And then there's quality of life

DON'T BE SCARED OF STATISTICS

There will be loss of quality if specifications don't match customer requirements and if there is variability of product.

Total quality must be a major aim of all sections of any organisation. The emphasis must be on the prevention of defects, and statistical information is one tool to help in this.

The reason why 'statistics' are linked to 'quality' is because all organisations show *variability*. This variability must be controlled so that there is consistency of quality. One way to control variability is by using simple, straightforward statistics. Statistics helps us to understand and to quantify variability.

An IBM story

"The following story is reported in a book by Gitlow and Gitlow, called *The Deming guide to quality and competitive position* (Englewood Cliffs, N. J., Prentice-Hall, Inc., 1987).

It is a story about IBM. I have met a couple of IBM executives who ought to know whether this story is true or not, and I have asked them personally if it's true, and they just smile. So I will let you decide if it is. I don't know. The story goes as follows:

> When IBM heard about the wonderful way the Japanese make computer chips, they decided they would order some to see just how well they were made. This was several years ago and they placed an order for 10,000 chips and in that order they put their usual specification for quality which means a lack of defective chips, and they gave them what they considered to be the most absurd quality requirement in the world. They wanted no more than three per 10,000 defective. In the United States, if we get into the one out of one hundred we are thrilled and anybody knows nine out of a thousand, that's Utopia. Well, as the story goes, the chips arrived in a box one day and on the top of the box was a letter and the letter said something along these lines: *We don't understand you Western business people, but we satisfied your request. In the box are your 10,000 chips. The three defective ones are in the manilla envelope.*"

From *Total management for organisations* by Bob Cope and Laurence Sherr, published by the TAFE National Centre for Research and Development.

Under some circumstances, variability can lead to important discoveries about a process or a product. So the *reasons* for variability are just as important as dealing with the variability itself.

Let's take a straightforward example of using statistics to control variability. It is taken from the TAFE National Centre for Research and Development.

Research project output at the Centre used to be unpredictable. Although project schedules were produced, there were always 'good' reasons why projects often seemed to be delayed. Two years ago timesheets were introduced so that a simple monthly breakdown, under major headings, of how research staff and support staff time was spent, can be produced. This quantified information can now be used in discussions on research output; the reasons for delays are identified, and remedial action can be taken.

The simple statistics used in this example are percentage breakdowns. This booklet is not the place to describe statistical techniques. To use statistics, data must be *collected*, appropriately *presented* (often graphically) and then *analysed*. Processes may be broken down visually into *flow charts* and problems may then be identified and solved. All of these are described in introductory statistics texts.

How many do you know?

It was in 1924 that Dr Walter A. Shewhart introduced statistics to quality control. Dr Shewhart is the 'father' of quality control, an idea which he introduced to the Bell Laboratories in the 1930s.

Check to see how familiar you are with some of the more common statistical terms. You will need to know them if you are going to use statistics. Do you know what is meant by the following?

Data	Proportion
Population	Distribution

Sample	Probability
Percentage	Venn diagram
Random (sample)	Correlation
Quota (sample)	Control chart
Variable	Flow chart
Frequency	Histogram

The further reading section includes books that explain these terms.

KEY PRINCIPLES

The Centre's project *Integrating quality concepts into TAFE courses* (described at the end of this booklet) listed eight key principles. They are shown below.

- *All systems exhibit variability.* Capability, control, and improvement, need to be understood.
- *Quality does not cost money, it pays.* The reduction of variability and systematic elimination of waste leads to higher quality, greater customer satisfaction and lower costs.
- *People work within systems.* Managers must work on the system with the help of everyone in the system.
- *Everyone serves a customer.* Quality must focus on customer needs.
- *Improvement efforts should be plan-driven, not event-driven.* Efforts must be directed towards achievement of goals of quality management at all levels.
- *Improvement should be a way of life.* Everyone should strive for continuous improvement by constantly seeking better ways.

* *Management should use facts and data.* Data are essential for solving problems and improving quality. If you can't measure the process you can't control the process.

* *Control the process, not the output.* Permanent improvements can be made by standardising, controlling and then improving processes and procedures.

Ichiro Ishikawa

In 1950, Ichiro Ishikawa arranged a meeting of 21 top Japanese managers. Later meetings followed in 1951 and 1952. A major new principle for Japanese management was discussed. This was that the *consumer is the most important part of a production line.* It was agreed that quality must be nationwide and include all organisations.

This knowledge made Japanese industry believe that competition with Europe and the USA was possible.

By 1960 'quality control circles' had been accepted by the Japanese. These QC-Circles enabled small groups of workers to draw on their expertise to improve quality and to improve efficiency.

What are the weaknesses in all of this? First, much of the literature on quality lends itself well to agreed essential changes to manufacturing industries. Workers are becoming multiskilled and training is taking account of this.

However, in some of the professions where staff already possess a high degree of autonomy, the notion of multiskilling which is sometimes promoted could be harmful. For example, in one branch of the public service it was decided that all staff should do their own (initial) word processing. Terminals were installed and senior staff spent

large amounts of their time processing letters. Many senior staff even attended typing courses.

Quality dropped, output dropped, blood pressure increased! Those senior staff were already multiskilled, without trying to incorporate the job of secretary.

So far we've avoided holding up any single country as one which should be followed (Japan, or Sweden, or even Moravia in the 1930s) because the quality principles described in this booklet can be applied in many ways.

Also, countries have important cultural differences. For example, Japan is a very hierarchical society, whereas Australia is not. Therefore, what works in Japan may not work here.

Fortunately, Australia is developing its own way, called industry restructuring, and that way will now be described.

THE AUSTRALIAN WAY: INDUSTRY RESTRUCTURING

Who mentioned cholesterol?

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Fashionable dinner parties in the USA are now serving Australian gourmet cheese. It makes a good topic for after dinner conversation (as well as good eating).

Conversation, will no doubt, include comments on the excellent quality of the cheese. Which is one reason why it is in such great demand.

To achieve quality products and services, everyone must be committed to making improvements. The main aim of the manufacturer or service organisation must be to service customer needs, which is what the gourmet cheese industry has recently been doing.

The demand for good quality products and services is causing Australian industry to restructure: another reason for restructuring is to sell at a competitive price. And to do this, traditional ways of doing work must change.

Traditionally, work has been rigidly structured into narrow bands of skills, with little overlap between jobs. This has often produced strict demarcation and a large number of trade classifications. Also, workers were remote from the customers of the company. All of that is now changing, and so is management.

Management has, in the past been hierarchical with a heavy 'policing' role, believing that quality can only be achieved by close supervision of workers and final product inspection. No wonder that most production and office workers have often shown little interest in their dead-end jobs, and little commitment to quality.

Flatter management structures, increased worker skills, and teamwork are now promoting more positive attitudes. Everyone must be committed and be responsible for quality and productivity.

The introduction of new technology is also causing changes to how work is being done. In manufacturing, the bringing together of new technology, changes to work organisation,

and increased worker skills is producing what is termed 'integrated manufacturing'.

Increased worker skills are only possible if an organisation is committed to training. Workplace reform is placing an emphasis on training, on a national standards framework, and on career paths.

Workplace reform is taking place so that the customer gets the right (quality) product or service at the right time and at the right price.

It would be pointless to produce inferior cooking cheese for the USA market: it wouldn't sell. And it would be pointless occasionally to try to export quality cheese which is merely left over after satisfying domestic sales. This has been the traditional approach to exporting many other products. Unreliability and good quality do not sit easily together.

With such a product as gourmet cheese there must be a quick response to market demand, with short lead times, from order to delivery. In other words, there must be service and flexibility.

Competitive prices, good quality, and greater service and flexibility are now all important if the customer is to be satisfied.

Quality organisations

The following organisations can give advice on quality improvement. (The 'phone book gives addresses.)

* Australian Organisation for Quality Control
* Enterprise Australia
* National Association of Testing Authorities

- National Industry Extension Service
- Standards Association of Australia
- Total Quality Management Institute of Australia

AN INTERNATIONAL EXAMPLE: MCDONALD'S

The word 'hamburger' and the name 'McDonald's' are almost synonymous, even though there are other fast-food outlets selling hamburgers; and even though McDonald's sells many other different products. (The full menu lists almost 50 items.)

'Quality' and 'McDonald's' are also synonymous. The basic hamburger has been unchanged since 1955. The products are exactly what the customer expects to get.

McDonald's founder, Ray Kroc coined 'QSC & V' which stands for 'Quality, Service, Cleanliness and Value'

The products are identical anywhere in the world: from Moscow to Melbourne, from Athens to Adelaide. The food is presented in less than four minutes after ordering in a way that appeals to customers, and at a reasonable price.

How does the McDonald's way of operating satisfy the questions raised at the beginning of the booklet? These questions are:

Am I getting what I'm supposed to get?

Am I getting it in a way that appeals to me?

Am I getting it on time?

Is it reasonably priced?

In all instances McDonald's is totally successful. As one employee told me: "Customers employ any organisation", and that belief is reflected in the operation.

McDonald's outlets are kept scrupulously clean by employees (known as 'crew members') who have been trained right down to the last detail of every activity. Here is one short extract from the front counter section of the training manual.

THE SIX STEPS	
Smile, greet the customer	Be enthusiastic, smile, look customer in eye, and greet with a pleasant tone of voice.
Take the order, suggestive sell or sell up	Suggestive sell when appropriate. Determine if orders are 'eat here' or 'take away', and determine all condiments.
Assemble the order	Follow the correct sequence in assembling the order. Use correct size bags if order is to take away.
Present the order	Slide tray or double folded bag towards the customer. Be sure McDonald's logo is facing customer.
Receive payment	State the amount given to you in a clear voice. Example: "Thank you, that's three dollars out of five dollars, Sir/Madam".

Thank the customer and ask for repeat business	Thank every customer and invite him/her back in a polite and sincere manner. Remember to treat children the same as adults. All children should receive a premium.

In Australia, Roy Morgan conducts surveys for McDonald's into customers' opinions on price and new products. No formal agreements are signed with any supplier; a handshake suffices, strict quality control applies to all suppliers, with McDonald's conducting spot-checks.

Weekly statistical reports are completed on, for example, total units sold and stocktaking figures.

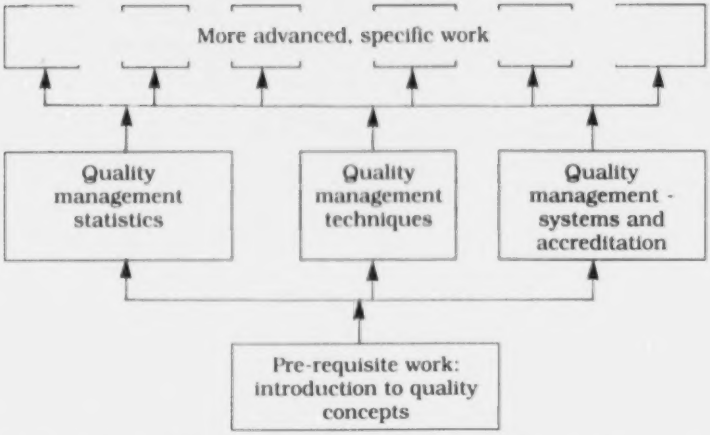
As with all human activities, things can sometimes go wrong. If an employee makes a mistake, the franchise manager is expected to conduct the necessary training so that staff behaviour is modified. The training manual with accompanying videos assists in this.

Recently, McDonald's came under attack from environmental groups who questioned their meat supply. McDonald's quick response was to show that nowhere in the world do they use beef raised on rainforest, or recently deforested rainforest.

Furthermore, alternative ways of packing were introduced, leading to the abandonment of the foam hamburger pack. In that activity they point out that they follow the three R formula of waste disposal: Reduce, Recycle, Reuse.

QUALITY IN TAFE COURSES

TAFE courses around the country are recognising the importance of including material on quality. One good example is taken from the South Australian Department of Employment and TAFE. The curriculum structure is shown on the next page.


More advanced, specific work
Quality management statistics
Quality management techniques
Quality management - systems and accreditation
Pre-requisite work: introduction to quality concepts

Let's look at this in greater detail. The pre-requisite work 'Introduction to quality concepts' introduces students to the basic ideas of quality management and the links between quality management and

- productivity
- profitability, and
- standard of living.

It also makes students aware of the importance of attitude in the application of quality ideas in the workplace.

The 20-30 hours of work includes simple statistics, problem-solving techniques and correct procedures to ensure consistent quality. This material is included in all basic certificates.

Advanced certificate and associate diploma courses include at least one of:

- statistics
- techniques, and
- systems and accreditation.

'Quality management - systems and accreditation' includes, for example, the development of a quality manual for the student's immediate place of work.

The more advanced, specific curriculum for advanced certificate and associate diploma courses includes quality systems work in the following areas:

- procedures preparation
- documentation systems
- auditing and assessing, and
- manuals preparation.

Deming's 14 points

W. Edwards Deming's excellent book *Out of the crisis* elaborates the 14 key points he claims are the basis for the transformation of US industry. They are listed below.

1. Create constancy of purpose for improvement of product and service.

2. Adopt the new philosophy.

3. Cease dependence on inspection to achieve quality.

4. End the practice of awarding business on the basis of price tag alone. Instead, minimise total cost by working with a single supplier.

5. Improve constantly and forever every process for planning, production, and service.

6. Institute training on-the-job.

7. Adopt and institute leadership.

8. Drive out fear.

9. Break down barriers between staff areas.

10. Eliminate slogans, exhortations, and targets for the work force.

11. Eliminate numerical quotas for the work force and numerical goals for management.

12. Remove barriers that rob people of pride of workmanship. Eliminate the annual rating or merit system.

13. Institute a vigorous program of education and self-improvement for everyone.

14. Put everybody in the company to work to accomplish the transformation.

IS QUALITY EVERYTHING?

On the next page is an extract from a list of professions and trades shown in a book published in 1765. The quality of work done was generally high and many products of the era still survive. But how many of the professions and trades have survived? The reason for the disappearance of many professions and trades is obvious, but we are slow to learn the lesson. This is where strategic planning comes in.

The trouble is that even the idea of strategic planning has become distorted, so that attractively printed and widely published booklets, with photographs, are now known as 'strategic plans'. They are not, and we have to remind ourselves what strategic planning is, so that the term may be more appropriately used.

Pin Maker
Plaiſterer
Plane Maker
Plate Caſe Maker
Plumber
Portrait Painter
Potter
Poulterer
Preſs Maker
Printer of Stuffs
Printer of Books
Printer's Joiner
Printer's Smith
Printſeller
Proctor
Publiſher
Pump Maker
Quilter
Rag Merchant
Rehner
Ribbon Weaver
Riveter of Saddles
Robe Maker
Rope Maker
Saddler
Sail Cloth Maker
Sail Maker
Saleſman
Saw Maker
Sawyer
Scale Maker
School Maſter
Scowerer
Screen Maker
Scrivener
Seedſman
Setter
Shagreen Caſe Maker
Ship Builder
Ship Carpenter
Ship Carver
Ship Chandler
Ship Joiner
Ship Painter
Shoe Maker
Silkman
Silk Throwſter
Silk Weaver
Silver Caſter
Silver Buckle Maker
Silver Smith
Silver and Gold Thread Spinners
Silver Turner
Skinner
Shop Keeper
Snuff Shop Keeper
Snuff Box Maker
Solicitor in Chancery
Soap Boiler
Spectacle Maker
Spangle Maker
Starch Maker
Stationer
Statuary
Stay Maker
Stocking Weaver
Stocking Trimmer and Preſſer
Stucco Worker
Stuff Shop Keeper
Sugar Baker
Surgeon
Surgeon's Inſtrument Maker
Sword Cutler
Tallow Chandler
Tanner
Taſſel Maker
Taylor
Teaman
Threadman
Timber Merchant
Tinman, or Tin Plate Worker

Warfare brought us strategic planning, but not the glossy books

Strategic planning is a way of *thinking*. It involves wisdom, vision, creativity and leadership. Bob Cope in his book *Total management for organisations* quotes Josh Owen of the University of New South Wales:

> *Strategic thinking involves asking the question: Where does my institution want to go? Operational planning is concerned with answering the question: How should my institution get there? combining these two aspects, I define strategic thinking as the process of developing a vision of where the institution wants to go and then developing managing strategies [plans] on how to get there.*

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WHERE TO FROM HERE?

Armand V. Feigenbaum in his classic reference book *Total quality control* describes six evolutionary stages. These are summarised below.

	FOCUS	PERIOD	DESCRIPTION
1.	Operator	1800s	One worker responsible for whole project
2.	Foreman	Early 1900s	Modern idea of factory
3.	Inspection	World War 1	Full-time inspectors
4.	Statistical	1920s-1930s	Extension of inspection stage
5.	Total	1960s-1970s	Operating framework for product quality
6.	Total organisational	1980s	Quality as a business strategy; total quality management

We are now at the sixth stage of 'total quality control organisation-wide, total quality management, and quality as a major new business strategy' according to Feigenbaum. What this means is that 'quality' is now a way of managing the organisation. So there should be periodic audits of processes employed within the organisation, just as there are annual audits of an organisation's accounts.

The International Standard ISO 9004-1987 has a section on auditing the quality system. The following areas of activity are listed:

- organisational structures
- administrative and operational procedures
- personnel, equipment and material resources
- work areas, operations and processes
- items being produced
- documentation, reports and record keeping.

Such a framework enables a professional evaluation to be undertaken. Successful organisations may then advertise the fact that they fulfil the requirements of the Standard.

Quality manuals

The Standards Association of Australia in their clear, well produced booklet *Guide to the preparation of quality manuals: SAA QS1-1988* suggest that an organisation's quality manual should include:

- policy
- organisation
- quality planning
- quality plans (practices related to specific contracts)
- general quality procedures
- communication network
- responsibilities and controls
- quality procedures related to design and development
- control during production
- work instructions
- inspection procedures
- statistical methods
- records
- documentation change control
- corrective action

- customer liaison
- vendor assessment
- installation
- servicing
- maintenance
- review and audit

Where do we go from here? If recent Australian studies are a guide, we don't seem to have gone very far down the quality road. The changes described in this booklet might help to get the journey started for those people who have yet to begin.

Perhaps the most important lesson to learn in all of this is that:

QUALITY IS NOT A DESTINATION BUT A JOURNEY

FURTHER READING

Robert Cope, *Total management for organisations: concepts and tools: a handbook for tertiary education,* published in 1991 by the TAFE National Centre for Research and Development.

Improving management for all organisations, but especially tertiary institutions, is the aim of the book. To do this three 'tool chests' are described: strategic thinking, speedy decision-making and total quality management.

W. Edwards Deming, *Out of the crisis,* published in 1982 by the Massachusetts Institute of Technology.

A clearly written book for managers, containing many practical examples. After you have read the Tribus lecture (see below) you should read this book, written by an expert who *understands* what he has written and so has made it comprehensible. The book contains numerous anecdotes and examples.

Department of Industry, Technology and Commerce *Report of the Committee of Review of Standards, Accreditation and Quality Control and Assurance,* published in 1987 by the Australian Government Printing Service.

Commonly known as the Foley Report (after its chairperson), the publication describes a comprehensive review of the national system of standards, accreditation and quality control and assurance. Obviously, many of its findings have been overtaken by events but, nevertheless, the report is still of use.

Armand V. Feigenbaum, *Total quality control,* published (as a 3rd edition) in 1991 by McGraw Hill.

First published in 1957, and completely revised for the '40th anniversary edition', this is a classic. It is an advanced reference text; extremely expensive; written for the engineering industry, but of far wider applicability.

Geoff Hayton, Kevin Neylon, Andrew Inglis and Maurice Hayes, *Integrating quality concepts into TAFE courses*, published in 1989 by the TAFE National Centre for Research and Development.

The TAFE National Centre was commissioned by the National Industry Extension Service to develop curricula on quality for integration into TAFE courses. As well as their report a set of three videos is available. Alas, the videos are of mixed quality!

Howard Gitlow and others, *Tools and methods for the improvement of quality*, published by Irwin in 1989.

Has a thorough treatment of statistics (as implied in the book's title) and of flowcharts.

National Industry Extension Service (NIES), *Total quality management: guide to concepts, principles, and imperatives*, published in 1990 by the Department of Industry, Technology and Commerce (DITAC).

A report commissioned by NIES. If you like visual presentations then the book may interest you.

Kaoru Ishikawa (translated by David J. Lu), *What is total quality control? The Japanese way*, published in 1985 by Prentice Hall.

A highly personal account of total quality control in Japan. The author is a realistic practitioner, whose humanistic

approach based on the structure of Japanese society should be read by all Australians concerned about quality.

John Sprouster, *Total quality control: the Australian experience*, published in 1984 by Horwitz Grahame.

The principles and practices of total quality control are discussed and Australian case studies given. It has a useful chapter on the tools of total quality management.

Myron Tribus, The Tribus lectures, published in 1988 by BHP Coated Products Division.

An essential publication, only 26 pages long, but most other Australian writing has (directly or indirectly) followed from this lecture. If you read nothing else, read this!